# TSymbols

## Wireless Microphone System

### TS-610 UHF
### Single Channel True Diversity
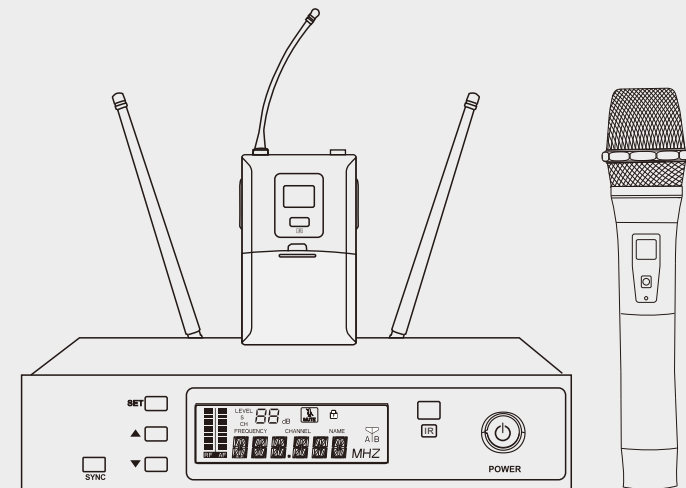


【Operating Instructions】

# Contents

Thank you for purchasing a TSYMBOLS professional wireless microphone system. Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

## HT-61 Handheld Microphone

| | |
|---|---|
| Carrier Frequency Range | UHF 603--634 MHz |
| Oscillation | PLL synthesized |
| Harmonic radiation | $<$-65dBm |
| Bandwidth | 30MHz |
| Max. Deviation Range | $\pm$45KHz |
| Microphone Element | Cardioid Dynamic |
| RF Power Output | 15mW |
| Battery | AA X 2 (alkaline) |
| Current Consumption | 90mA, typical |
| Battery Current / Life | Approximately 10 hours |
| Dimension | 45($\Phi$) X 240 (L) |
| Weight | 317g ( w/o battery) |

## PT-60 Body-pack Transmitter

| | |
|---|---|
| Carrier Frequency Range | UHF 603--634 MHz |
| Oscillation | PLL synthesized |
| Harmonic radiation | $<$-65dBm |
| Bandwidth | 30MHz |
| Max. Deviation Range | $\pm$45KHz |
| Input Connector | 4-pin mini-XLR connector |
| RF Power Output | 15mW |
| Battery | AA X 2(alkaline) |
| Current Consumption | 90mA, typical |
| Battery Current / Life | Approximately 10 hours |
| Dimension | 72(H) X68(W) X 21(D) |
| Weight | 71g ( w/o battery) |

## 5，Specifications

### TS-610 Receiver

| | |
|---|---|
| Main Frame Size | EIA-Standard 19" 1/2 U |
| Channels | Single Channel |
| Frequency Stability | ±0.005%, Phase Lock Loop frequency control |
| Carrier Frequency Range | UHF 603--634 MHz |
| Preset Channels | 32 preset channels |
| Operating Range | 90M typical ( in open space) |
| Oscillation | PLL synthesizeden space) |
| Sensitivity | 6dBμV, S/N>60dB at 25 deviation |
| Band Width | 30MHz |
| Max. Deviation Range | ±45KHz |
| S/N | >105dB |
| T.H.D. | <0.7% @ 1KHz |
| Frequency response | 45Hz～18KHz±3dB |
| Squelch | "PiloTone & NoiseLock" dual-squelch circuit |
| Power Supply | External AC adapter, 12-15V DC, 10W |
| Weight | 1.3kg |
| Dimension | 210(W) X 45(H) X 200(D) |
| Output Connector | XLR balanced & 6.3φ phone jack unbalanced |

## 1, Receiver Installation and Connections

### Installation:

① For better operation the receiver should be at least 3ft. (1m) above the ground and at least 3ft. away from a wall or metal surface to minimize reflections.
Attached a pair of UHF antennas to the antenna input jacks, the antenna are normally positioned in the shape of a "V" (both 45° from vertical) for best reception.

③ Keep antennas away from noise sources such as computer, digital equipment, motors, automobiles and neon lights, as well as away from large metal objects.

④ Keep open space between the receiver and transmitter for better reception.

⑤ The transmitter should be at least 3ft. from the receiver.

### Connections:

① The switching power supply is designed to operate properly from any AC power source 100-240V, 50/60Hz without user adjustment. Simply connect the receiver to a standard AC power outlet, using only an IEC-type input cordset approved for the country use. Power to the unit is controlled by the front panel power switch.

② There are two audio outputs on the rear panel: an XLR microphone output and a 1/4" (6.3mm) phone jack instrument output. The two isolated audio outputs permit simultaneous feeds to two different inputs. Use the appropriate shielded audio cable for connections between the receiver and the input(s) of the mixer or other equipment.

## 2, Receiver Controls and Functions

### Receiver Features:

① Compact half rack space design with all metal receiver housing.

② True diversity provides the most effective elimination of dropouts.

③ Automatic Frequency Selection provides a straight shot to a clear channel.

④ Transmitter Sync.

⑤ 300 selectable frequencies across 30MHz bandwidth.

⑥ LCD Displays: RF Level, Audio Level, Battery Life, Antenna Status, Channel.

⑦ Equipped with both XLR balanced and Ø6.3mm unbalanced outputs.

⑧ TS-610 is suitable for a variety of applications: For example for musicians or actors on stage, presenters and moderators in meetings, sports events, hotels, universities and houses of worship.

## Figure 1: Front Panel
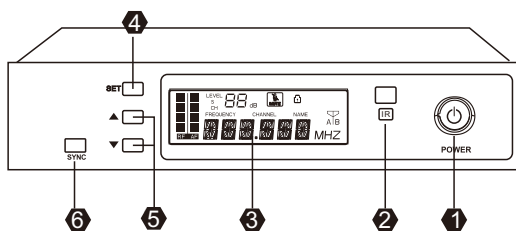


① Power Switch：Press power switch in 3 seconds to turn on the power.

② Infrared Data Transfer Window (IR): Transmit receiver data to the transmitter.

③ LCD Window: Liquid Crystal Display indicates control setting, operational readings, and transmitter' battery condition.∗ The receiver's "fuel gauge" battery indicator displays a maximum of 4 bar segments. When it leaves 1 bar segment, the transmitter' batteries should be replaced immediately to ensure continued operation.

e) VOLUME: Selecting "VOLUME", touch SET Button to enter edit mode, touch ▲ / ▼ button to scroll through the available choice for the function. The volume level is providing a 20dB range. Then SET button to confirm the desired choice.

*NOTE*: If selecting VOLUME, arrow ▲ / ▼ button is to change the volume level, so "AFS" function is useless, to use AFS, you have to enter the menu mode, then select "CHANNL".)
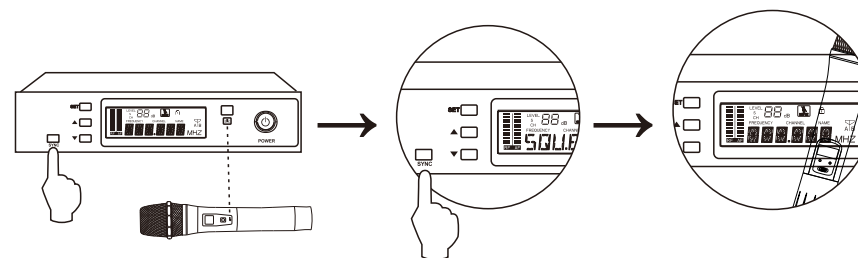
f) LOCK: Selecting "LOCK", touch SET Button to enter edit mode, touch < / > button to select "ON" or "OFF", then SET button to confirm the desired choice.

g) EXIT: Exit edit mode.

## Transmitter Setup

① Turn on the transmitter.

② Frequency setup: To let the transmitter IR receiving window face to the receiver IR data transfer window, then press "SYNC" button, the transmitter will receive the frequency / channel dada from the receiver, simultaneously the LCD displays the same frequency / channel as the receiver.

## Figure 5

③ To change the frequency by manual or "AFS" (Auto Frequency Selection).

a), Touch ▲ / ▼ button once to select a new frequency, then SET button to confirm.

b), Press and hold ▲ / ▼ button 3 seconds and the receiver will auto-

scan and lock on to an open, interference-free frequency.

④ To enter the menu mode: Press and hold the Set button 3 seconds to

enter the edit mode, touch ▲ / ▼ button once to select and set

a) DISPLY（DISPLAY）: Selecting "DISPLY", then touch SET Button to

enter edit mode, touch ▲/ ▼ button to select "FREQUE"(FREQUENCY) or "CHANNL"(CHANNEL), then SET button to confirm the desired choice.

b) TUNE: Selecting "TUNE", touch SET Button to enter edit mode, touch

▲ / ▼ button to change the frequency manually. The frequency is adjustable in 50MHz, then SET button to confirm the desired choice.

∗**NOTE**: If selecting TUNE, arrow ▲ / ▼ button is to change the frequency, so "AFS" function is useless, to use AFS, you have to enter the menu mode, then select "CHANNL".

c) CHANNL (CHANNEL): Selecting "CHANNL", touch SET Button to enter edit mode, touch ▲ / ▼ button to change the channel manually, there are 32 preset channels. Then SET button to confirm the desired choice

d) SQUELC (SQUELCH): Selecting "SQUELC", touch SET Button to enter edit mode, touch ▲ / ▼ button to scroll through the available choice for the function. The squelch level is adjustable in four 5dB steps, providing a 20dB range. Press SET Button to confirm the desired choice. (If interference is a problem, first consider trying a different frequency, either manually or scanning.)

④ SET Button: Use in conjunction with the Up / Down arrow buttons to step through menus, choose operating frequency and select receiver function options.
⑤ UP / DOWN Buttons:
a), Press Up or Down arrow button, in conjunction with the Set button, to step through menus, select operating frequency and edit receiver function choices.
b), "ASF" Button: Press Up or Down arrow button 3 seconds and the receiver will auto-scan and lock on to an open, interference-free frequency.
⑥ Infrared Data Transfer Button (SYNC): Press this button to transmit data from receiver to transmitter.

## Figure 2: Rear Panel
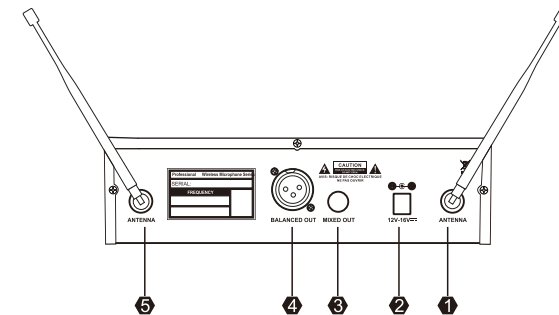


① Antenna Input Jack: BNC type antenna connector for tuner "B", attached the antenna directly.
② DC Power Output Jack: 12V / 700mA.
③ Unbalanced Mixed Output Jack: Unbalanced Mixed Output Jack: 1/4" (6.3mm) phone jack. Can be connected to an aux-level input of a mixer, guitar amp or tape recorder.
④ Balanced Output Jack: XLR type connector. A standard 2 conductor shielded cable can be used to connect the receiver output to a balanced microphone level input on a mixer or integrated amplifier.
⑤ Antenna Input Jack: BNC type antenna connector for tuner "A", attached the antenna directly

## 3, Transmitter Controls and Functions

### Handheld Microphone Features:

① Rugged, ergonomically designed housing.

② LCD display with channel and frequency.

③ 30MHz bandwidth.

④ Extremely low handling noise.

⑤ Infrared automatic transmitter sync.

⑥ 2 x AA batteries – up to 10 hours continue use.

### Figure 3:
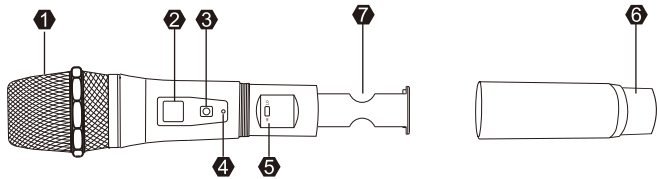


① Microphone Head.

② LCD Window: Liquid crystal display indicates operational frequency, channel and battery life.

  ∗ The transmitter's "fuel gauge" battery indicator displays a maximum of 3 bar segments. When it leaves 1 bar segment, the transmitter' batteries should be replaced immediately to ensure continued operation.

③ Infrared Data Receiving Window (IR): Use to receive the data from receiver.

④ Power Button.

⑤ RF switch for Low / High.

⑥ Battery Cover: Unscrew it can reveal the battery compartment.

⑦ Battery Compartment: Insert 2 fresh 1.5V AA batteries. (Alkaline type is recommended, always replace both batteries.) Observe correct polarity as marked inside the battery compartment.

### Body-pack Transmitter Features:

① Rugged, ergonomically designed housing.

② LCD display with channel and frequency.

③ 30MHz bandwidth.

④ Equipped with 4 pin mini XLR connector.

⑤ Infrared automatic transmitter sync.

⑥ 2 x AA batteries – up to 10 hours continue use.

### Figure 4:
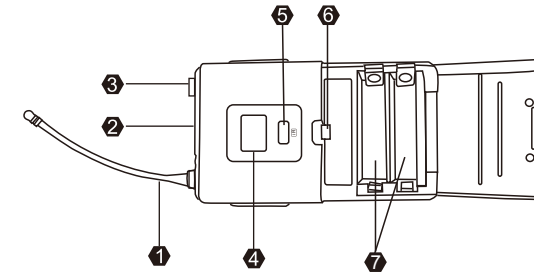


① Antenna.

② Power Button.

③ Audio Input Jack: To connect 4-pin mini-XLR connector.

④ LCD Window: Liquid crystal display indicates operational frequency and channel.

⑤ Infrared Data Receiving Window (IR): Use to receive the data from receiver.

⑥ Battery Door Switch: Open up the switch directly.

⑦ Battery Compartment: Insert 2 fresh 1.5V AA batteries. (Alkaline type is recommended, always replace both batteries.) Observe correct polarity as marked inside the battery compartment.

## 4, System Setup

### Receiver Setup

① Turn down the AF level of the associated mixer or amplifier, and make sure that any TS transmitters are turned off.

② Turn on the receiver, the LCD displays the preset data.